Background: Few data exist regarding the incidence of vascular complications associated with transfemoral catheterization and sheath placement into synthetic vascular grafts.

Methods: We performed a retrospective analysis of all patients who underwent aortofemoral bypass surgery at our institution between January, 1991 and July, 2003. Those patients who underwent subsequent transfemoral catheterization were selected. A total of 123 procedures were performed in 70 patients between February, 1994 and April, 2003.

Results: One hundred and thirteen coronary (91.9%) and 10 peripheral (8.1%) procedures were performed, including sixty-four (52.0%) interventional (angioplasty and/or stent), and 59 (48%) diagnostic procedures. Two of the interventional procedures included placement of an intracath balloon pump via the graft. The interval between graft implantation and sheath placement was 2.9 ± 2.1 years (range 4 days to 10.3 years). Four procedures (3.3%) required concomitant brachial or radial access due to inability to access the ascending aorta via the femoral approach. Pre-procedural anticoagulation included aspirin (91.9%), clopidogrel (28.5%), warfarin (10.6%), and intravenous heparin (39.0%). The peak activated clotting time was 313 ± 70 units (range 15-840). Symptoms included lower abdominal pain (59%), diaphoresis (59%), groin pain (45%) and back pain (18%). Groin hematoma was evident in 32%. The incidence of RPH was 6.8/1000 cases. Mean age±SD was 67±12 years in both groups. Cases and controls did not differ in prevalence of hypertension, diabetes, or current smoking. Cases and controls were compared using the chi-square and logistic regression.

There were 22 cases of radiographically documented RPH. Cases were compared to a random sample of 50 controls using chi-square and logistic regression.

Conclusions: With the widespread use of GP IIb/IIIa inhibitors and VCDs, being a woman remains a significant risk factor for RPH, as does a more superior femoral artery puncture. Awareness of the determinants and clinical features of RPH may aid in prevention, early recognition, and prompt treatment.

Poster Session 3:00 p.m.-4:00 p.m.

1100-55 Intravenous Mesenchymal Stem Cell Therapy Early After Reperefused Acute Myocardial Infarction Improves Left Ventricular Function and Alters Ventricular Electrophysiologic Properties


Background: Direct intramyocardial injection of stem cells improves LV function. However, the injection of immature cells has been associated with an increased risk of ventricular arrhythmias. We hypothesized that the IV infusion of allogeneic mesenchymal stem cells (MSCs) without immunosuppression after acute MI would improve LV function but might be accompanied by pro-arrhythmic electrical remodeling.

Methods: An apical MI was induced in swine by balloon occlusion-reperfusion of the mid-LAD. Animals received either no treatment, or 30 min of reperfusion. Dilabeled allogeneic bone marrow-derived MSCs (3.2±0.4 x 10^6 cells) were infused IV. LV function was evaluated by LV cineangiography and wall thickness by echocardiography. Epicardial effective refractory periods (ERPs) were determined at 3 month sacrifice. Spectral imaging by confocal microscopy was used to identify DiI in tissue specimens.

Results: At 3 months, MSC treated pigs (n=7) had significantly higher LVEF than controls (n=8) (50±1% vs 44±1%, p=0.015), as well as significantly higher LV systolic pressure (144±6 mmHg vs. 139±11 mmHg, p=0.01). The mean increase in LVEDV over time tended to be greater in the control group (48±6cm^3 vs. 32±6cm^3, p=0.09). The wall thickness of normal, non-infarcted myocardium increased significantly more in controls than in treated animals. ERPs of the MSC group were significantly shorter than controls at all pacing cycle lengths in LV peri-infarct, LV free wall (FW), and right ventricular (RV) FW (255±6, 227±5, 255±6 ms, vs 251±6, 247±7 ms, all p<0.002). The mean slope of the ERP restitution curves was steeper in the MSC group than in controls (1.6±0.8 vs 1.0±0.4, p=0.02). Dil was identified in the lungs and myocardium of treated animals.

Conclusions: IV infusion of MSCs soon after reperfused acute MI in swine improves LV function, lessens compensatory hypertrophy of non-infarcted myocardium, shortens ERP, and steepens the ERP restitution curve. Clinical trials assessing the efficacy of IV MSC therapy after MI in humans should include arrhythmia monitoring.